

THAT WHICH IS CLAIMED:

1. An isolated polypeptide having an amino acid sequence selected from the group consisting of:
- (a) The amino acid sequence shown in SEQ ID NO 1 or SEQ ID NO 3;
 - (b) The amino acid sequence encoded by the cDNA contained in ATCC Deposit No. PTA-1644;
 - (c) The amino acid sequence of an allelic variant of the amino acid sequence shown in SEQ ID NO 1 or SEQ ID NO 3;
 - (d) The amino acid sequence of an allelic variant of the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. PTA-1644;
 - (e) The amino acid sequence of a sequence variant of the amino acid sequence shown in SEQ ID NO 1 or SEQ ID NO 3, wherein the sequence variant is encoded by a nucleic acid molecule hybridizing to the nucleic acid molecule shown in SEQ ID NO 2 or SEQ ID NO 4 under stringent conditions;
 - (f) The amino acid sequence of a sequence variant of the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. PTA-1644, wherein the sequence variant is encoded by a nucleic acid molecule hybridizing under stringent conditions to the cDNA contained in ATCC Deposit No. PTA-1644;
 - (g) A fragment of the amino acid sequence shown in SEQ ID NO 1 or SEQ ID NO 3, wherein the fragment comprises at least 12 contiguous amino acids;
 - (h) A fragment of the amino acid sequence encoded by the cDNA contained in ATCC Deposit No. PTA-1644, wherein the fragment comprises at least 12 contiguous amino acids;
 - (i) The amino acid sequence of the mature polypeptide from about amino acid 6 to the last amino acid shown in SEQ ID NO 1 or SEQ ID NO 3;
 - (j) The amino acid sequence of the mature polypeptide from about amino acid 6 to the last amino acid encoded by the cDNA clone contained in ATCC Deposit No. PTA-1644; and
 - (k) The amino acid sequence of an epitope bearing region of any one of the polypeptides of (a)-(k).

2. An isolated antibody that selectively binds to a polypeptide of claim 1, (a)-(k).

3. A method for producing any of the polypeptides in claim 1 comprising introducing a nucleotide sequence encoding any of the polypeptide sequences in (a)-(k) into a host cell, and culturing the host cell under conditions in which the proteins are expressed from the nucleic acid.

4. A method for detecting the presence of any of the polypeptides in claim 1 in a sample, said method comprising contacting said sample with an agent that specifically allows detection of the presence of the polypeptide in the sample and then detecting the presence of the polypeptide.

5. The method of claim 4, wherein said agent is capable of selective physical association with said polypeptide.

6. The method of claim 4, wherein said agent binds to said polypeptide.

7. The method of claim 4, wherein said agent is an antibody.

8. The method of claim 4, wherein said agent is cAMP.

9. A kit comprising reagents used for the method of claim 4, wherein the reagents comprise an agent that specifically binds to said polypeptide.

10. A method for detecting the presence of any of the nucleotide sequences encoding the polypeptides in claim 1 in a sample, the method comprising contacting the sample with an oligonucleotide that hybridizes to the nucleic acid sequence under stringent conditions and determining whether the oligonucleotide binds to the nucleic acid in the sample.

11. The method of claim 10, wherein the nucleic acid, whose presence is detected is, mRNA.

12. A kit comprising reagents used for the method of claim 10, wherein reagents comprise a compound that hybridizes under stringent conditions to any of the nucleic acid molecules.

13. The method of claim 4, wherein a fragment of the polypeptide is contacted.

14. A method for identifying an agent that binds to any of the polypeptides in claim 1, said method comprising contacting the polypeptide with an agent that binds to the polypeptide and assaying the complex formed with the agent bound to the polypeptide.

15. A method for modulating the activity of any of the polypeptides in claim 1, said method comprising contacting any of the polypeptides of claim 1 with an agent under conditions that allow the agent to modulate the activity of the polypeptide.

16. A method for treating osteoporosis, breast cancer, or congestive heart failure, comprising administering the polypeptides of claim 1 to a subject having or at risk of developing osteoporosis, breast cancer, or congestive heart failure.

17. The method of claim 15, wherein said modulation is in a cell derived from a tissue selected from the group consisting of heart, ovary, brain, pancreas, kidneys, breast, liver, testis, prostate, skeletal muscle, and osteoblast-containing tissue.

18. The method of claim 15, wherein said modulation is in a subject having or predisposed to having congestive heart failure, breast cancer, or osteoporosis.

22025, A NOVEL HUMAN CYCLIC NUCLEOTIDE PHOSPHODIESTERASE

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ADD
B2d

add
C4

add
D2